



6CL6

# POWER PENTODE

MINIATURE TYPE

## GENERAL DATA

### Electrical:

Heater, for Unipotential Cathode:

Voltage . . . . . 6.3 . . . . . ac or dc volts  
Current . . . . . 0.65 . . . . . amp

Direct Interelectrode Capacitances (without external shield):

Grid No.1 to Plate . . 0.120 . . . . .  $\mu$ f  
Input . . . . . 11 . . . . .  $\mu$ f  
Output . . . . . 5.5 . . . . .  $\mu$ f

### Characteristics, Amplifier Class A<sub>1</sub>:

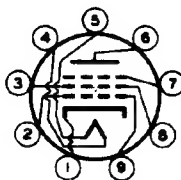
Plate Voltage . . . . . 250 volts  
Grid No.3 . . . . . Connected to cathode at socket  
Grid-No.2 Voltage . . . . . 150 volts  
Grid-No.1 Voltage . . . . . -3 volts  
Peak AF Grid-No.1 Signal Voltage . . . . . 3 volts  
Zero-Signal DC Plate Current . . . . . 30 ma  
Max.-Signal DC Plate Current . . . . . 31 ma  
Zero-Signal DC Grid-No.2 Current . . . . . 7 ma  
Max.-Signal DC Grid-No.2 Current . . . . . 7.2 ma  
Plate Resistance (Approx.) . . . . . 0.15 megohm  
Transconductance . . . . . 11000  $\mu$ hos  
Grid-No.1 Voltage (Approx.) for  
plate current of 10  $\mu$ amp . . . . . -14 volts  
Load Resistance . . . . . 7500 ohms  
Total Harmonic Distortion . . . . . 8 per cent  
Max.-Signal Power Output . . . . . 2.8 watts

### Mechanical:

Mounting Position . . . . . Any  
Maximum Overall Length . . . . . 2-5/8"  
Maximum Seated Length . . . . . 2-3/8"  
Length, Base Seat to Bulb Top (excluding tip) . . . . . 2"  $\pm$  3/32"  
Maximum Diameter . . . . . 7/8"  
Bulb . . . . . T-6-1/2  
Base . . . . . Small-Button Noval 9-Pin (JETEC No.E9-1)

### BOTTOM VIEW

Pin 1 - Cathode  
Pin 2 - Grid No.1  
Pin 3 - Grid No.2  
Pin 4 - Heater  
Pin 5 - Heater



Pin 6 - Plate  
Pin 7 - Grid No.3,  
Int.Shield  
Pin 8 - Grid No.2  
Pin 9 - Grid No.1

### AMPLIFIER - Class A<sub>1</sub>

### Maximum Ratings, Design-Center Values:

PLATE VOLTAGE . . . . . 300 max. volts  
PLATE SUPPLY VOLTAGE . . . . . 300 max. volts  
GRID-No.3 (SUPPRESSOR)VOLTAGE . . . . . 0 max. volts

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TENTATIVE DATA

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## POWER PENTODE

GRID-No.2 (SCREEN) VOLTAGE . . . . .	See Rating Curve at front of this Section
GRID-No.2 SUPPLY VOLTAGE . . . . .	300 max. volts
GRID-No.1 (CONTROL-GRID) VOLTAGE:	
Negative bias value . . . . .	50 max. volts
Positive bias value . . . . .	0 max. volts
PLATE DISSIPATION . . . . .	7.5 max. watts
GRID-No.2 INPUT . . . . .	1.7 max. watts
PEAK HEATER-CATHODE VOLTAGE:	
Heater negative with respect to cathode .	90 max. volts
Heater positive with respect to cathode .	90 max. volts
BULB TEMPERATURE (At hottest point on bulb surface) . . . . .	200 max. °C

## Typical Operation in 4-Mc Bandwidth Video Amplifier

Circuit of Fig. 1:

Plate Supply Voltage . . . . .	300	volts
Grid No.3 . . . . .	Connected to cathode at socket	
Grid-No.2 Supply Voltage . . . . .	300	volts
Grid-No.1 Bias Voltage . . . . .	-2	volts
Grid-No.1 Signal Voltage (Peak to Peak) .	3	volts
Grid-No.2 Resistor . . . . .	24000	ohms
Grid-No.1 Resistor . . . . .	0.1	megohm
Load Resistor . . . . .	3900	ohms
Zero-Signal Plate Current . . . . .	30	ma
Zero-Signal Grid-No.2 Current . . . . .	7.0	ma
Voltage Output (Peak to Peak) . . . . .	132	volts

## Maximum Circuit Values:

## Grid-No.1-Circuit Resistance:

For fixed-bias operation . . . . .	0.1 max. megohm
For cathode-bias operation . . . . .	0.5 max. megohm

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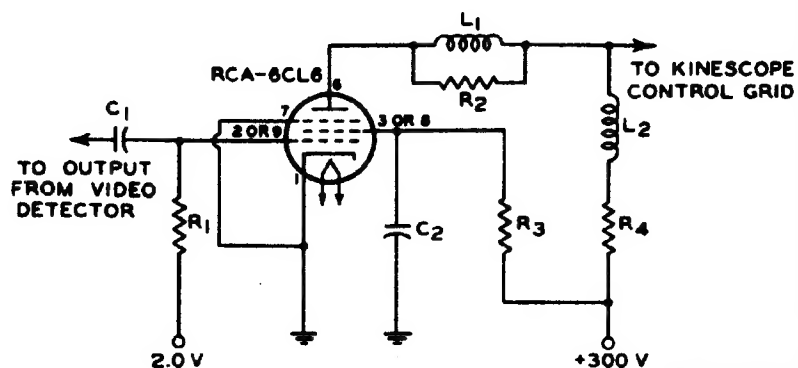
TENTATIVE DATA



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## POWER PENTODE

**Fig. 1 - Typical Video Voltage Amplifier Circuit  
Having Bandwidth of 4 Mc.**



**92CS-7804**

C1: 0.1  $\mu$ f, 400 volts

C2: 4  $\mu$ f, 400 volts

L1: Peaking Coil, 180  $\mu$ h

L2: Peaking Coil, 120  $\mu$ h

R1: 100000 ohms, 0.5 watt

R2: 47000 ohms, 0.5 watt  
R3: 24000 ohms, 2 watts

R3: 24000 ohms, 2 Watts  
R4: 3900 ohms, 5 watts

R4: 5900 Ohms, 5 watts  
non-inductive type

Devices and arrangements shown or described herein may use patents of RCA or others. Information contained herein is furnished without responsibility by RCA for its use and without prejudice to RCA's patent rights.

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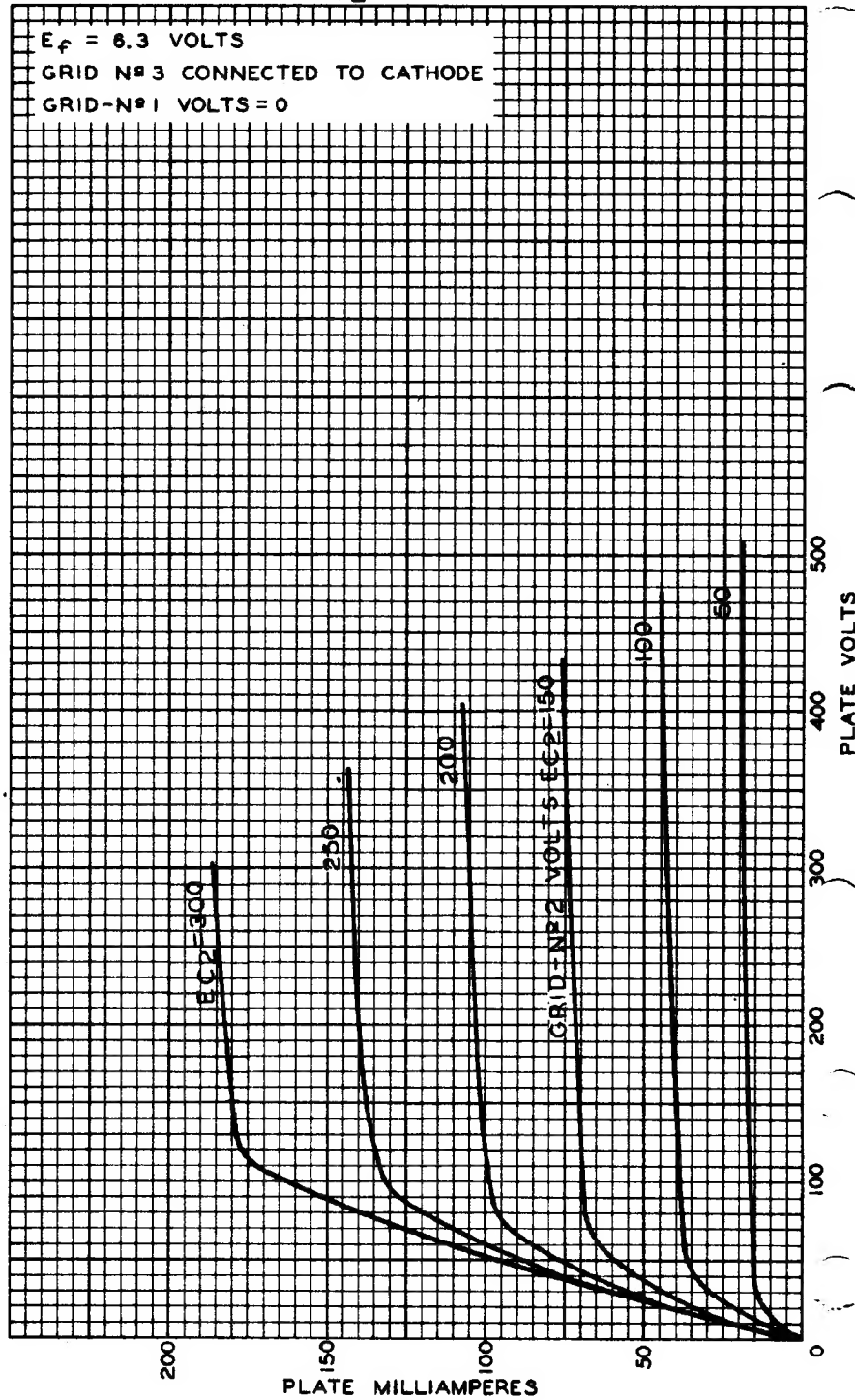
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# AVERAGE PLATE CHARACTERISTICS WITH EC2 AS VARIABLE



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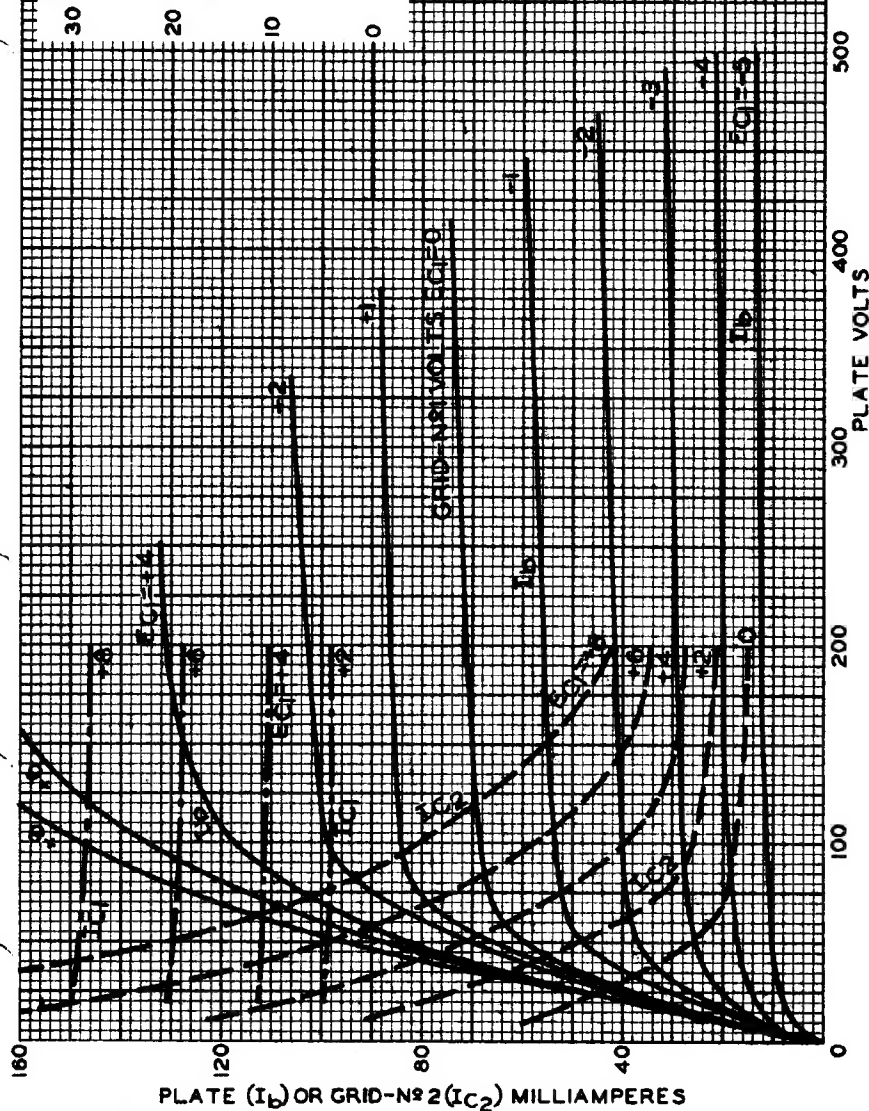
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# AVERAGE PLATE CHARACTERISTICS WITH $E_{C1}$ AS VARIABLE

$E_f = 6.3$  VOLTS  
GRID-Nº 3 CONNECTED TO CATHODE  
GRID-Nº 2 VOLTS = 150

GRID-Nº 1 ( $I_{C1}$ ) MILLIAMPERES



MAY 22, 1952

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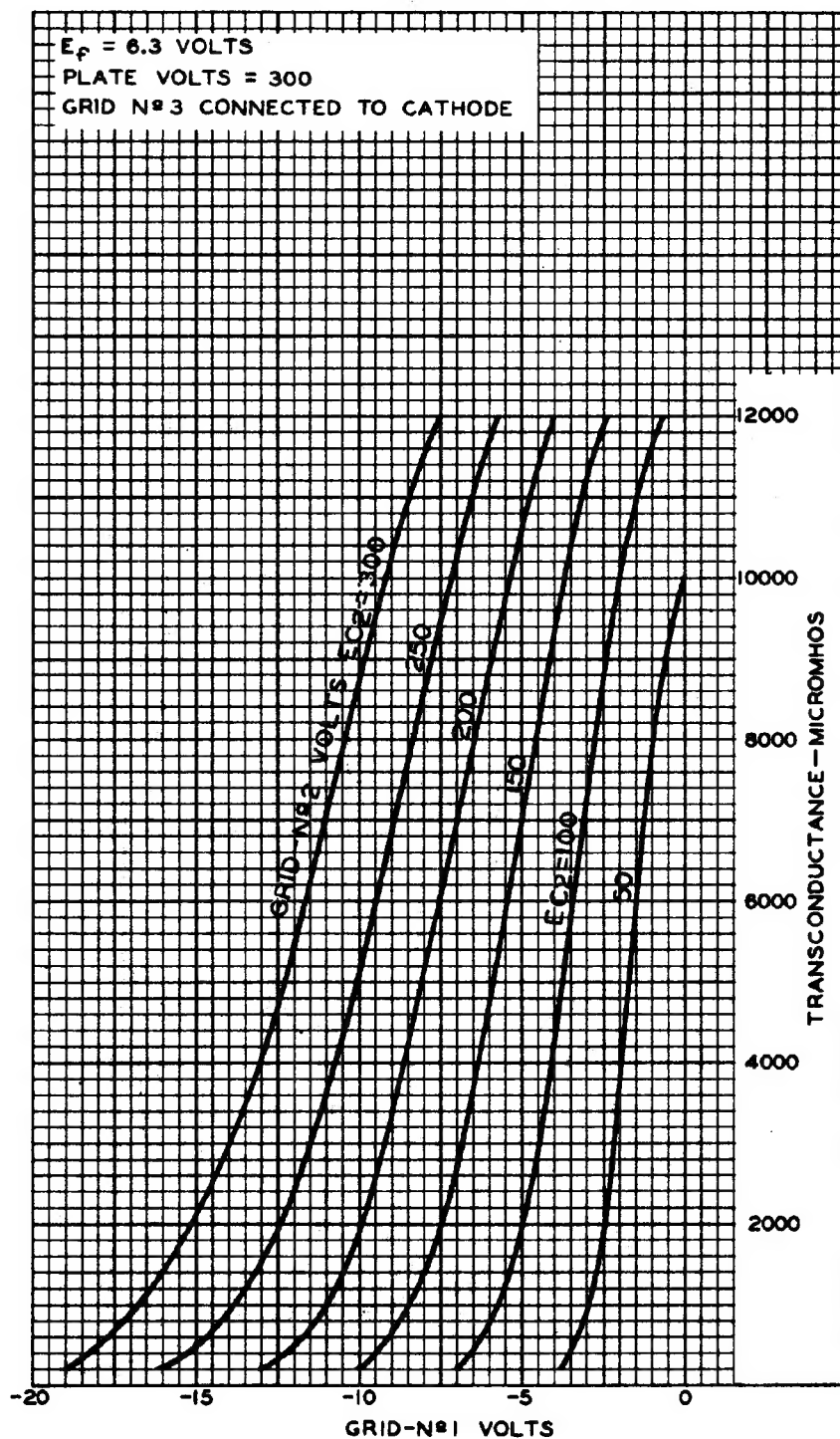
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# AVERAGE CHARACTERISTICS



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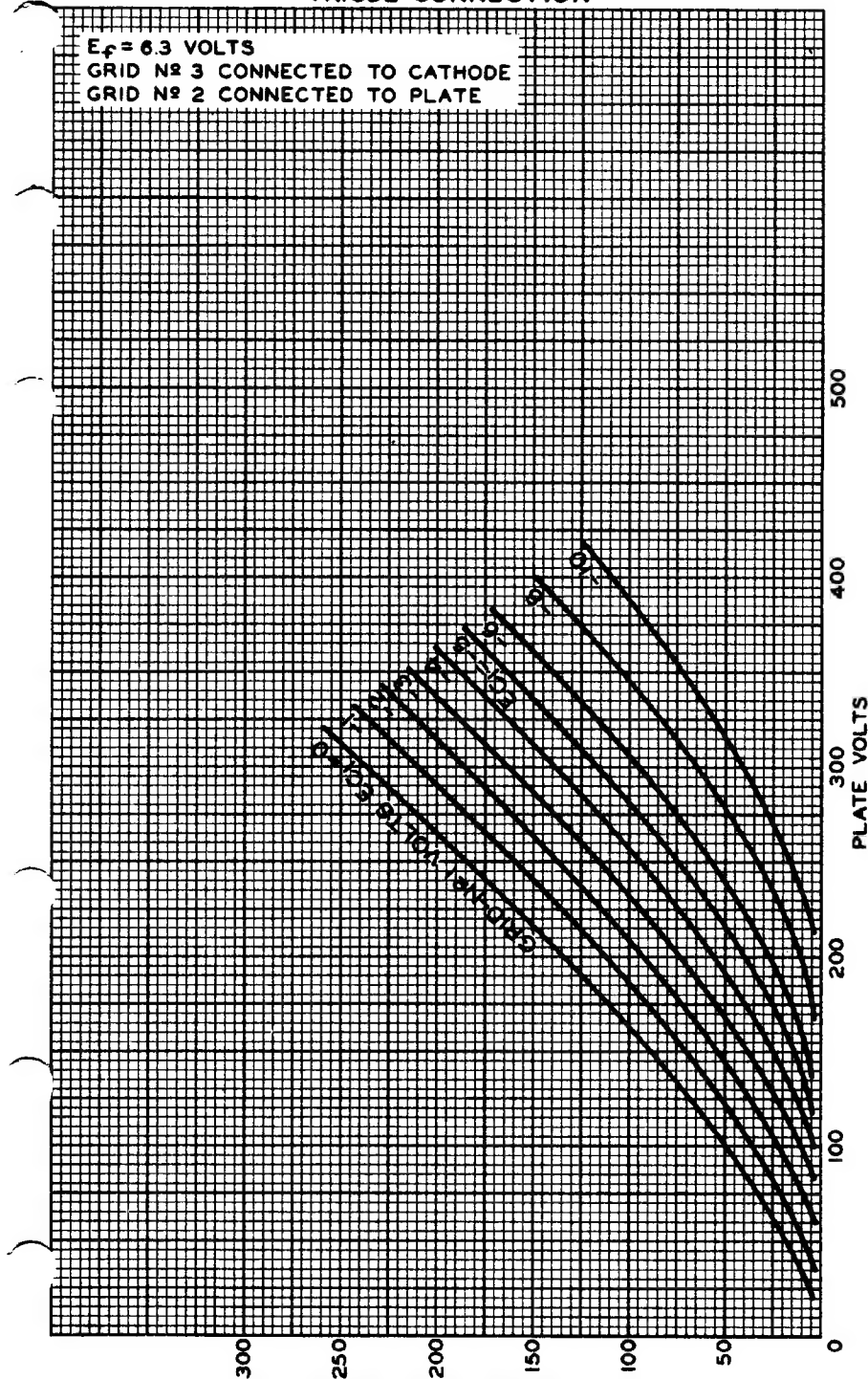


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# AVERAGE PLATE CHARACTERISTICS TRIODE CONNECTION

$E_f = 6.3$  VOLTS  
GRID N° 3 CONNECTED TO CATHODE  
GRID N° 2 CONNECTED TO PLATE



MAY 26, 1952

PLATE MILLIAMPERES  
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